2008 International Symposium on Parallel and Distributed Processing with Applications

ISPA 2008

Table of Contents

Message from the ISPA-08 General Chair
Message from the ISPA-08 Program Chairs
Message from the ISPA-08 Steering Chairs
Message from the ISPA-08 Workshop Chairs
ISPA-08 Organizing and Program Committees
Message from the IPC-08 General Chairs
Message from the IPC-08 Program Chairs
Message from the IPC-08 Steering Chairs
Message from the IPC-08 Workshop Chairs
IPC-08 Organizing and Program Committees
Message from the APDCT-08 Symposium Chairs
Message from the CSS-08 Workshop Chairs
CSS-08 Organizing and Program Committees
Message from IST-AWSN-08 Workshop Chairs
IST-AWSN-08 Organizing and Program Committees
Message from the UPWN-08 Workshop Chairs
UPWN-08 Organizing and Program Committees
Message from the HiPGCoMB-08 Workshop Chairs
HiPGCoMB-08 Organizing and Program Committees
Message from the MASSN-08 Workshop Chairs
MASSN-08 Organizing and Program Committees
Message from the SVANET-08 Workshop Chairs
SVANET-08 Organizing and Program Committees
Message from AWSN-08 Workshop Chair
AWSN-08 Organizing and Program Committees
Message from the ISHCI-08 Workshop Chairs
ISHCI-08 Organizing and Program Committees
Message from the ACI-08 Workshop Chairs
ACI-08 Organizing and Program Committees
Keynote Speaker

ISPA: Distributed Systems

An Innovative Replica Consistency Model in Data Grids ................................................................. 3
  Jih-Sheng Chang and Ruay-Shiung Chang

An Effective Approach for Consistency Management of Replicas in Data Grid ................................. 11
  Ghalem Belalem, Cherif Haddad, and Yahia Slimani

A Novel QoS-Enable Real-Time Publish-Subscribe Service ........................................................... 19
  Xinjie Lu, Tian Yang, Zaifei Liao, Xin Li, Yongyan Wang, Wei Liu, and Hongan Wang

Modeling of End-to-End Available Bandwidth in Wide Area Network ........................................... 27
  Wanida Putthividhya, Arka P. Ghosh, and Wallapak Tavanapong

Towards Practical Virtual Server-Based Load Balancing for Distributed Hash Tables .......................... 35
  Chyouhwa Chen, Ching-Bang Yao, and So-Ming Liang

Self-Stabilizing Construction of Bounded Size Clusters .................................................................... 43
  Colette Johnen and LeHuy Nguyen

ISPA: Security

Authorization Using the Publish-Subscribe Model ............................................................................. 53
  Qiang Wei, Matei Ripeanu, and Konstantin Beznosov

Trust Management for Ubiquitous Healthcare .................................................................................... 63
  Weiwei Yuan, Donghai Guan, and Sungyoung Lee

Integrating Security Solutions to Support nanoCMOS Electronics Research .................................... 71
  R. Sinnott, C. Bayliss, T. Doherty, D. Martin, C. Millar, G. Stewart, J. Watt, A. Asenov,
  G. Roy, S. Roy, C. Davenhall, B. Harbulot, and M. Jones

Misusing Kademlia Protocol to Perform DDoS Attacks ..................................................................... 80
  Zhoujun Li and Xiaoming Chen

ISPA: Application Analysis

Analyzing the Efficiency and Bottleneck of Scientific Programs on Imagine Stream Processor by Simulation ................................................................. 89
  Yonggang Che, Chuanfu Xu, and Zhenghua Wang

Parallelism without Pain: Orchestrating Computational Algebra Components into a High-Performance Parallel System .................................................................................. 99

Parallelisation of the Valgrind Dynamic Binary Instrumentation Framework .................................... 113
  Daniel Robson and Peter Strazdins
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyzing QoS Approach for Parallel Soft Real-Time</td>
<td>122</td>
</tr>
<tr>
<td>Pedro Furtado</td>
<td></td>
</tr>
<tr>
<td>A System for Dynamic Server Allocation in Application Server Clusters</td>
<td>130</td>
</tr>
<tr>
<td>Adam Chester, James Wen Jun Xue, Ligang He, and Stephen Jarvis</td>
<td></td>
</tr>
<tr>
<td><strong>ISPA: Power and Optimization</strong></td>
<td></td>
</tr>
<tr>
<td>Computation with Energy-Time Trade-Offs: Models, Algorithms</td>
<td>143</td>
</tr>
<tr>
<td>Brad D. Bingham and Mark R. Greenstreet</td>
<td></td>
</tr>
<tr>
<td>Energy Optimal Scheduling on Multiprocessors with Migration</td>
<td>153</td>
</tr>
<tr>
<td>Brad D. Bingham and Mark R. Greenstreet</td>
<td></td>
</tr>
<tr>
<td>Energy-Oriented OpenMP Parallel Loop Scheduling</td>
<td>162</td>
</tr>
<tr>
<td>Yong Dong, Juan Chen, Xuejun Yang, Lin Deng, and Xuemeng Zhang</td>
<td></td>
</tr>
<tr>
<td>DMA Performance Analysis and Multi-core Memory Optimization for SWIM</td>
<td>170</td>
</tr>
<tr>
<td>Benchmark on the Cell Processor</td>
<td></td>
</tr>
<tr>
<td>Yong Dou, Lin Deng, Jinhui Xu, and Yi Zheng</td>
<td></td>
</tr>
<tr>
<td>Relaxing Synchronization in a Parallel SystemC Kernel</td>
<td>180</td>
</tr>
<tr>
<td>Philippe Combes, Eddy Caron, Frédéric Desprez, Bastien Chopard, and Julien Zory</td>
<td></td>
</tr>
<tr>
<td><strong>ISPA: Distributed Applications</strong></td>
<td></td>
</tr>
<tr>
<td>Mapping Light Communication SLA-Based Workflows onto Grid Resources</td>
<td>191</td>
</tr>
<tr>
<td>Dang Minh Quan, Jörn Altmann, and Laurence T. Yang</td>
<td></td>
</tr>
<tr>
<td>EasyGrid Enabling of Iterative Tightly-Coupled Parallel MPI Applications</td>
<td>199</td>
</tr>
<tr>
<td>Alexandre Sena, Aline Nascimento, Cristina Boeres, and Vinod Rebello</td>
<td></td>
</tr>
<tr>
<td>A Wireless Sensor System for Long-Term Microclimate Monitoring</td>
<td>207</td>
</tr>
<tr>
<td>Xia Ming, Dong Yabo, Lu Dongming, Xue Ping, and Liu Gang</td>
<td></td>
</tr>
<tr>
<td>QPID: A Distributed Priority Queue with Item Locality</td>
<td>215</td>
</tr>
<tr>
<td>Ratan Bajpat, Krishna Kishore Dhara, and Venkatesh Krishnaswamy</td>
<td></td>
</tr>
<tr>
<td><strong>ISPA: Middleware and Tools</strong></td>
<td></td>
</tr>
<tr>
<td>Architecture for an Offline Parallel Debugger</td>
<td>227</td>
</tr>
<tr>
<td>Karl Lindekugel, Anthony DiGirolamo, and Dan Stanzione</td>
<td></td>
</tr>
<tr>
<td>GRPLib: A Web Service Based Framework Supporting Sustainable Execution of Large-Scale and Long-Time Grid Applications</td>
<td>236</td>
</tr>
<tr>
<td>Yingwen Song, Hiroshi Takemiya, Yoshio Tanaka, Hidemoto Nakada,</td>
<td></td>
</tr>
<tr>
<td>and Satoshi Sekiguchi</td>
<td></td>
</tr>
<tr>
<td>A Programming Framework for Incremental Data Distribution in Iterative Applications</td>
<td>244</td>
</tr>
<tr>
<td>Philip Chan and David Abramson</td>
<td></td>
</tr>
</tbody>
</table>
A Utility-Based Double Auction Mechanism for Efficient Grid Resource Allocation

Chainan Satayapiwat, Ryusuke Egawa, Hiroyuki Takizawa, and Hiroaki Kobayashi

iShadow: Yet Another Pervasive Computing Environment

Daqiang Zhang, Hu Guan, Jingyu Zhou, Feilong Tang, and Minyi Guo

**ISPA: Parallel Applications**

Custom Assignment of MPI Ranks for Parallel Multi-dimensional FFTs:

Evaluation of BG/P versus BG/L

Heike Jagode and Joachim Hein

A Task Parallel Algorithm for Computing the Costs of All-Pairs Shortest Paths on the CUDA-Compatible GPU

Tomohiro Okuyama, Fumihiko Ino, and Kenichi Hagihara

Dynamic Reconfiguration of Tasks Applied to an UAV System Using Aspect Orientation

Edison de Freitas, Alécio P.D. Binotto, Carlos Eduardo Pereira, Andre Stork, and Tony Larsson

Broadcasting in Weighted-Vertex Graphs

Hovhannes Harutyunyan and Shahin Kamali

Parallel Algorithm for Road Points Extraction from Massive LiDAR Data

Jiangtao Li, Hyo Jong Lee, and Gi Sung Cho

**ISPA: Architecture**

Mesh Connected Crossbars: A Novel NoC Topology with Scalable Communication Bandwidth

Arash Tavakkol, Reza Moraveji, and Hamid Sarbazi-Azad

A General Approach for Analytical Modeling of Irregular NoCs

Reza Moraveji, Paria Moinzadeh, and Hamid Sarbazi-Azad

Effects of MSHR and Prefetch Mechanisms on an On-Chip Cache of the Vector Architecture

Akihoro Musa, Yoshiei Sato, Takashi Soga, Ryusuke Egawa, Hiroyuki Takizawa, Koki Okabe, and Hiroaki Kobayashi

Fixed Point Decimal Multiplication Using RPS Algorithm

Rekha K. James, Shahana T.K., K. Poulose Jacob, and Sreela Sasi

**ISPA: Mobile Networks**

Adaptive Neighbor Caching for Fast BSS Transition Using IEEE 802.11k Neighbor Report

Ching-Hwa Yu, Michael Pan, and Sheng-De Wang

CLCP – A Distributed Cross-Layer Commit Protocol for Mobile Ad Hoc Networks

Sebastian Obermeier, Stefan Böttcher, and Dominik Kleine
An Efficient Checkpointing and Rollback Recovery Scheme for Cluster-Based Multi-channel Ad Hoc Wireless Networks .......................................................... 371  
Chaoguang Men, Zhenpeng Xu, and Xiang Li

Multiple Radio Channels and Directional Antennas in Suburban Ad Hoc Networks ................................................................................................................. 379  
Sk. Mohammad Rokonuzzaman, Ronald Pose, and Iqbal Gondal

Link Lifetime-Based Segment-by-Segment Routing Protocol in MANETs .......................................................... 387  
Yujie Chen, Guojun Wang, and Sancheng Peng

**IPC: Smart Services and Applications**

Adapting Pervasive Environments through Machine Learning and Dynamic Personalization ........................................................................................................ 395  
Sarah McBurney, Eliza Papadopoulou, Nick Taylor, and Howard Williams

Virtual and Pervasive Smart Home Services Using Tangible Mixed Reality .......................................................... 403  
Jae Yeol Lee, Dongwoo Seo, Gue Won Rhee, Sung Hun Hong, and Ji-Seung Nam

A Dynamic Approach to Dealing with User Preferences in a Pervasive System .......................................................... 409  
Elizabeth Papadopoulou, Sarah McBurney, Nick Taylor, and M. Howard Williams

Intelligent Target Tracking and Shooting System with Mean Shift ........................................................................ 417  
Xiang Xiang, Wenhui Chen, and Du Zeng

**IPC: Intelligent Computing**

Intelligent Method and Algorithm for Multi-attribute Decision-Making under Linguistic Setting Based on Risk-Weighted .......................................................... 425  
Zhou Qihai, Li Yan, Huang Tao, Han Zaixing, Sun Xiezhi, and Wang Yan

Performance Improving of Semi-join Based Join Operation through Algebraic Signatures ........................................................................................................ 431  
Riad Mokadem, Abdelkader Hameurlain, and Franck Morvan

Policy-Based Network Management as a Platform for the Pricing of Ubiquitous Network Services .......................................................... 439  
Jairo A. Gutiérrez

A Formal Specification Model of Survivability for Pervasive Systems .......................................................... 444  
Adel Ayara and Faiza Najjar

A Datalog Model for Context Reasoning in Pervasive Environments ........................................................................ 452  
Ismail Khalil, Feki Mohamed Ali, and Gabriele Kotsis

**IPC: Mobile and Wireless Communications**

A New Address Allocation Scheme and Planning of Personal Area and Sensor Networks .......................................................... 463  
Johnson Ihyeh Agbinya and Mary Anya Agbinya

Use of Street Maps to Aid Node Localization in Mobile Wireless Networks ........................................................................ 471  
Mohammad Al-hattab and Johnson I. Agbinya
An Optimal Causal Broadcast Protocol in Mobile Dynamic Groups .................................................. 477
Chafika Benzaid and Nadjib Badache

An Evaluation of a Security Mechanism Response Time Using a General Purpose OS for a Multi-hop Network ................................................................. 485
Mihoko Uno and Masato Oguchi

**IPC: Multimedia**

Consistent Music Recommendation in Heterogeneous Pervasive Environment .............................................. 495
Linchun Cao and Minyi Guo

A Ubiquitous 3D Graphics Modeler for Mobile Devices .................................................................................. 502
Hiroaki Nishino, Kenji Shihara, Tsuneo Kagawa, and Kouichi Utsumiya

MB Energy Trend-Based Intra Prediction Algorithm for MPEG-2 to H.264/AVC Transcoding ................................................................. 510
Xingang Liu, Wei Zhu, and Kook-Yeol Yoo

Bits of Personality Everywhere: Implicit User-Generated Content in the Age of Ambient Media ................................................................. 516
Artur Lugmayr, Simon Reymann, Stefan Kemper, Tillmann Dorsch, and Pablo Roman

**IPC: Embedded Systems**

FITVS: A FPGA-Based Emulation Tool For High-Efficiency Hardness Evaluation .................................................. 525
Hongchao Zheng, Long Fan, and Suge Yue

Autonomous Ultrasonic Indoor Tracking System .................................................................................. 532
Junhui Zhao and Yongcai Wang

An Improved Design for UMP (Ubiquitous Multi-processor) System .................................................................................. 540
Gongwei Zhang, Mianxiong Dong, Long Zheng, Deze Zeng, and Minyi Guo

Wideband Stacked Microstrip Patch Antenna for Wireless Communication .................................................. 547
Mohammad Tariqul Islam, Norbahiah Misran, Mohammed Nazmus Shakib, and Baharudin Yatim

**APDCT: Resource and Data Management and Scheduling**

Analyze of Probabilistic Algorithms under Indeterministic Scheduler .................................................. 553
Joofroy Beauquier and Colette Johnen

Design Techniques for the Scalability of Cluster Management Software on Dawning Supercomputers .................................................. 559
Bibo Tu, Ming Zou, Jianfeng Zhan, and Jianping Fan

Dynamic Provisioning of a Parallel Workflow Management System .................................................. 566
Ching-Hong Tsai, Kuo-Chan Huang, and Feng-Jian Wang

RL-Based Scheduling Strategies in Actual Grid Environments .................................................. 572
Bernardo Costa, Ines Dutra, and Marta Mattoso

Efficient, Chunk-Replicated Node Partitioned Data Warehouses .................................................. 578
Pedro Furtado
APDCT: Parallel and Distributed Software Technologies
A System for Aggregated Visualization of Multiple Parallel Discrete Event Simulations .................................................................587
Tim Süß, Daniel Huber, Matthias Fischer, Christoph Laroque, and Wilhelm Dangelmaier
Image Feature Vector Construction Using Interest Point Based Regions ..........................................................594
Nishat Ahmad, Gwangwon Kang, Hyunsook Chung, Suchoi Ik, and Jongan Park
Parallelization with Automatic Parallelizing Compiler Generating Consumer Electronics Multicore API .................................................................600
Takamichi Miyamoto, Saori Asaka, Hiroki Mikami, Masayoshi Mase, Yasutaka Wada,
Hirofumi Nakano, Keiji Kimura, and Hironori Kasahara
Topo-Semantic Constraints Checking .................................................................608
Li Xiang, Kalum Priyanath Udagepola, Men Chao Guan, and Stephen Lovatt
Performance Evaluation of Recommendation Retrieval in Peer-to-Peer Networks .................................................................614
Farag Azzedin and Ahmad Ridha

APDCT: Parallel and Distributed System Architecture
An Analysis of Exclusive Control Mechanisms .................................................................623
Kazuaki Masamoto and Takaichi Yoshida
An End User Enabled MAC-in-MAC Encapsulation Scheme for Metro-Ethernet .................................................................631
Xiaocui Sun, Zhijun Wang, Hao Che, and Feng Zhao
Broadcast Algorithms on OTIS-Cubes .................................................................637
Hamid Ebrahimi-Kahaki and Hamid Sarbazi-Azad
Performance Evaluation of Broadcast Algorithms in All-Port 2D Mesh Networks .................................................................643
Mitra Khorramabadi and Hamid Sarbazi-Azad
Adapting the Hyper-Ring Interconnect for Many-Core Processors .................................................................649
Fadi N. Sibai

APDCT: High Performance Scientific Computing
A Fully Dynamic Distributed Algorithm for a B-Coloring of Graphs .................................................................657
Shuang Liu, Brice Effantin, and Hamamache Khedouci
The Influence of Efficient Message Passing Mechanisms on High Performance Distributed Scientific Computing .................................................................663
Seyedeh Leili Mirtaheri, Ehsan Mousavi Khanegah, Mohsen Sharifi, 
and Mohammad Abdollahi Azgomi
Parallelizing Optimal Multiple Sequence Alignment by Dynamic Programming .................................................................669
Manal Helal, Hossam El-Gindy, Lenore Mullin, and Bruno Gaeta
Ocean-Atmosphere Application Scheduling within DIET ................................................................. 675
   Yves Caniou, Eddy Caron, Ghislain Charrier, Frédéric Desprez, Éric Maisonnave, and Vincent Pichon

**CSS: International Workshop on Cyberspace Safety and Security**

Strengthening SMS-Based Authentication through Usability .......................................................... 683
   Mohammed Aizomai, Audun Josang, Adrian McCullagh, and Ernest Foo

Incident Response Probabilistic Cognitive Maps ........................................................................... 689
   Jihene Krichene and Noureddine Boudriga

Dynamic Purpose-Based Access Control ......................................................................................... 695
   Huanchun Peng, Jun Gu, and Xiaojun Ye

Secure Dataspace with Access Policies .......................................................................................... 701
   Yawei Zhang and Xiaojun Ye

A Generic Construction of Identity-Based Online/Offline Signcryption ......................................... 707
   Dongdong Sun, Yi Mu, and Willy Susilo

A New Authentication Protocol for Wireless Communication Network Based on IEEE802.16 .......................................................... 713
   Ruixue Li, Zhiyi Fang, Wei Cao, Yumei Yin, and Peng Xu

New Traceability Codes and Identification Algorithm for Tracing Pirates ..................................... 719
   Xin Wen Wu, Paul Watters, and John Yearwood

DynamicWEB: A Method for Reconnaissance Activity Profiling ..................................................... 725
   Joel Scanlan, Jacky Hartnett, and Raymond Williams

A Trust Model Based on Similarity Evaluation in P2P Networks ..................................................... 737
   Yingwei Jin, Yong Zhang, Wenyu Qu, Yining Liu, and Keqiu Li

**IST-AWSN: Workshop on Intelligent Systems Techniques for Ad Hoc and Wireless Sensor Networks**

Intelligent Context-Aware System Architecture in Pervasive Computing Environment .................... 745
   Jaewoo Chang, Sora Na, and Min Yoon

Energy-Efficient Data Aggregation Protocol for Location-Aware Wireless Sensor Networks ............ 751
   Hong Min, Sangho Yi, Junyoung Heo, Yookun Cho, and Jiman Hong

Event Classification and Filtering of False Alarms in Wireless Sensor Networks ............................. 757
   Markus Wälchli and Torsten Braun

MANET Mining: Mining Temporal Association Rules ..................................................................... 765
   Ahmad Jabas, Rama Murtty Garimella, and Ramachandram Sirandas
UPWN: International Workshop on Ubiquitous Processing for Wireless Networks

Power-Efficient Architecture of Zigbee Security Processing ..............................................................773
  Jiho Kim, Jungyu Lee, and Ohyoung Song

EADD: Energy Aware Directed Diffusion for Wireless Sensor Networks ........................................779
  Jisul Choe and Keecheon Kim

A Distributed Relay MAC Protocol in WiMedia Wireless Personal Area ........................................784
  Hyunmee Shin, Yongsun Kim, Sangheon Pack, and Chul-hee Kang

The Bandwidth Feasibility Test Method for Ubiquitous Teleconference on Future Internet ..............790
  Sunglim Lee, Koji Okamura, and Eunho Yang

Movement Awareness Position-Based Routing Protocol for Intersection of Urban Environment ..........795
  Yunho Jung and Keecheon Kim

Diamond-Shaped Routing Method for Reliable Data Transmission in Wireless Sensor Networks ........799
  Jung-Eun Lee and Keecheon Kim

Intelligent Service Enabler Based on Context-Aware in Next Generation Networks .........................802
  Jiho Kim, Jongmyung Jeong, SeungMin Nam, and Ohyoung Song

Design of an Enhanced Handover Algorithm Based on a New Adaptive SR-ARQ for Next-Generation Mobile Communication Networks .........................................................807
  Man Kyu Park, Yun Chul Choi, Jae Yone Lee, Byung Chul Kim, Dae Young Kim, and Jae Ho Kim

HiPGCoMB: International Workshop on High Performance and Grid Computing in Medicine and Bioinformatics - Short Papers

Performance Evaluation of Protein Structure Comparison Algorithms Under Integrated Resource Management Environment for MPI Jobs .............................................................817
  Azhar A. Shah, Daniel Barthel, Gianluigi Folino, and Natalio Krasnogor

Supporting Parallel R Code in Clinical Trials: A Grid-Based Approach ........................................823
  Dennis Wegener, Thierry Sengstag, Stelios Sfakianakis, and Stefan Rüping

The MedIGrid PSE in an LCG/gLite environment ............................................................................829
  Almerico Murli, Vania Boccia, Luisa Carracciolo, Luisa D’Amore, Giuliano Laccetti, and Marco Lapegna
HiPGCoMB: International Workshop on High Performance and Grid Computing in Medicine and Bioinformatics - Full Papers

A Tool for the Semiautomatic Acquisition of the Morphological Data of Blood Vessel Networks ...............................................................837
Mario Cannataro, Pietro Hiram Guzzi, Giuseppe Tradigo, and Pierangelo Veltri

Data Aggregation and Analysis: A Grid-Based Approach for Medicine and Biology ................................................................................841
Dimosthenis Kyriazis, Konstantinos Tserpes, George Kousiouris, Andreas Menychtas, Gregory Katsaros, and Theodora Varvarigou

Advances in the GReIC Data Access Service ........................................849
Sandro Fiore, Alessandro Negro, Salvatore Vadacca, Massimo Cafaro,
Giovanni Aloisi, Roberto Barbera, and Emidio Giorgio

Bayesian Phylogenetic Inference in the LIBI Grid Platform: A Tool to Explore Large Data Sets ...............................................................855
Maria Mirto, Saverio Vicario, Daniele Tartarini, Italo Epicoco, Cecilia Saccone,
and Giovanni Aloisi

MASSN: International Workshop on Modeling, Analysis and Simulation of Sensor Networks

A Generalized Clustering Algorithm for Dynamic Wireless Sensor Networks ...............................................................863
Raluca Marin-Perianu, Johann Hurink, and Pieter Hartel

Mohammad Al Saad, Elfriede Fehr, Nicolai Kamenzky, and Jochen Schiller

Dynamic Reconfigurable Task Schedule Support towards a Reflective Middleware for Sensor Network ................................................886
Edison Pignatom de Freitas, Alecio Pedro Delazari Binotto, Carlos Eduardo Pereira,
Andre Stork, and Tony Larsson

Self-Adaptability and Organization for Pervasive Computing and Sensor Network Environments Using a Biologically-Inspired Approach .................................892
Ehsan Sakhaee, Naoki Wakamiya, and Masayuki Murata

Simulating a WSN-Based Wildfire Fighting Support System .........................896
Eva M. García, M. Ángeles Serna, Aurelio Bermúdez, and Rafael Casado

SVANET: International Workshop on Secure Vehicular Ad Hoc Networks

A Feasible Modular Mesh Networking Platform for Vehicular Ad Hoc Networks .................................................................................905
David J. Claypool, Kevin M. McNeill, Timothy J. McNevin, and Raja R. Balan

Critical Aspects for a Secure IP Mobility Architecture in Vehicular Area Networks (VANETs) .................................................................911
Wolfgang Fritsche
AWSN: International Workshop on Adaptation in Wireless Sensor Networks

Experiments in Adaptive Power Control for Truly Wearable Biomedical Sensor Devices .................................................................919
Ashay Dhamdhere, Vijay Sivaraman, and Alison Burdett

Virtual Sensor Networks: An Embedded Agent Approach ..............................................................................................................926
Richard Tynan, G.M.P. O’Hare, Michael J. O’Grady, and Conor Muldoon

Evaluating Interpolation-Based Power Management ........................................................................................................................933
Richard Tynan and G.M.P. O’Hare

A Framework for a QoS Based Adaptive Topology Control System for Wireless Ad Hoc Networks with Multibeam Smart Antennas ..............................................................940
Sk. Mohammad Rokonuzzaman, Ronald Pose, and Iqbal Gondal

Adaptability in the B-MAC+ Protocol ..............................................................................................................................................946
Marco Avvenuti and Alessio Vecchio

Feature Calibration in Sensor Networks ..............................................................................................................................................952
Hui Cao, Anish Arora, Emre Ertin, and Kenneth W. Parker

Sung-rok Jung, Jeong-hoon Lee, and Byeong-hee Roh

ISHCI: International Workshop on Intellectual Information Systems and Human-Computer Interfaces

A Low-Cost OMR Solution for Educational Applications ..................................................................................................................967
Hui Deng, Feng Wang, and Bo Liang

A Robust Blob Recognition and Tracking Method in Vision-Based Multi-touch Technique .................................................................................................................................971
Feng Wang, Xiangshi Ren, and Zhen Liu

A Comparative Evaluation of Mode Switching Techniques ................................................................................................................975
Chuanyi Liu, Xiangshi Ren, and Dawei Li

An Empirical Comparison of Pen Pressure and Pen Tilt Input Techniques .........................................................................................982
Xiaolei Zhou, Xiangshi Ren, and Yue Hui

ACI: International Workshop on Ambient Computing and Intelligence

Simplifying Concurrent Programming of Networked Embedded Systems ................................................................................................993
Meysam Khezri, Mehdi Agha Sarram, and Fazlollah Adibnia

The Use of Border in Colour 2D Barcode .......................................................................................................................................999
Siong Khai Ong, Douglas Chai, and Keng T. Tan

Development of a Novel Finder Pattern for Effective Color 2D-Barcode Detection .............................................................................1006
Hiroko Kato, Keng T. Tan, and Douglas Chai

Author Index